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THE OLDEST FIXED DATE IN HISTORY

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Historians of the Hebrew people were formerly troubled by the haunting possibility that extra-biblical contemporary sources might some day disclose a remoter era in the career of man than the chronology supposably obtainable from the Old Testament would permit. All such fears long ago disappeared, not because the dreaded data have not been forthcoming, but because the Old Testament does not offer any basis for a calculation of the age of man on the earth.

Anthropological studies have long since demonstrated the enormous antiquity of man. The dates, however, with which the anthropologist, operating in conjunction with the geologist, deals, necessarily cannot be fixed, but move within the widest limits. It is of interest, therefore, to study briefly the state of the case from the historical archæologist's point of view. Recently ascertained data make such a statement of especial interest at this time. The data to which we refer are confined to the civilization of the Nile valley.

Professor von Luschan, the distinguished director of the Ethnological Museum in Berlin, showed the present writer, some time ago, a number of specimens of worked flint implements wrought by human hands, and found by him in deposits in the Nile valley, which he averred were demonstrably older than the valley itself. Leaving these *pre-historic* problems to the anthropologist and geologist, however, recent study of the *historic* monuments in the Nile valley has furnished an earlier *fixed* date in the history of civilization than has ever before been obtainable.

There are three great epochs in Egyptian history: (1) the Old Kingdom, (2) the Middle Kingdom, (3) the Empire. These great epochs are separated by periods of profound obscurity. Dead reckoning back from the conquest of Egypt by the Persians in 525 B. C. shows clearly that the beginning of the Egyptian Empire was not less than 1,052 years before the Persian invasion. This gives us a date in the first half of the sixteenth century B. C. as the beginning of the Egyptian Empire. The method of dead reckoning cannot be employed for the centuries immediately preceding the Empire, owing to the paucity of monuments. Fortunately, however, we possess an astronomical date for the Middle Kingdom which fixes its beginning as almost exactly 2000 years before Christ, thus enabling us to overleap the chasm between the beginning of the Empire and the Middle Kingdom. At this point, however, we are confronted by another obscure period, where the meagerness of the monumental documents is such that the length of the obscure age preceding the Middle Kingdom remains an uncertain quantity. During this period there ruled at Heracleopolis, near the Fayûm, two dynasties, the Ninth and Tenth, embracing eighteen kings. As we know that the Eleventh Dynasty ruled over 160 years, we must add the length of the period ruled by the eighteen Heracleopolitans to the year 2160 B. C. in order to obtain the date of the accession of these Heracleopolitan Pharaohs. Allowing each of the eighteen a reign of sixteen years (a sum below the customary average in a long period of time under orderly conditions of government), these kings ruled a total of about 285 years. They thus began to rule in 2445 B. C. At this point we can resume the method by dead reckoning, carrying us back through the Old Kingdom, which began with the Third Dynasty nearly 3,000 years before Christ; and thence into the recently discovered first two dynasties which are thus shown to have begun about 3,400 B. C. In the use of this last date for the beginning of the dynastic kings of Egypt, we should always recollect that we carry back with us the uncertainty involved in the unsettled length of the Heracleopolitan period (Ninth and Tenth Dynasties). The margin of uncertainty, however, will not exceed a century either way.

The highly developed civilization already attained by the Egyptians of the First Dynasty makes it certain that a long development of civilization, involving centuries of struggle and achievement, must have preceded the advent of the First Dynasty. It is incontrovertibly evident that this development began far back in the fourth thousand years before Christ. In this statement, however, we arrive only at a very wide margin of uncertainty. Is it not possible to obtain a date of greater precision in this remote epoch of human civilization?

The Egyptians had early determined the length of the year as 365 days, not being aware of the additional quarter, or nearly a quarter, of a day. This convenient year they divorced from the phases of the moon, and divided it into twelve months of thirty days each, with an intercalary period of five days at the end of the year. This, the first practical calendar ever evolved by an ancient people, remained an achievement unparalleled in any other early civilization. It was as useful to men of science as to civil life in general, and for this reason it was in later times adopted by the Greek astronomers as the basis of all their computations. With the addition of exactly a quarter of a day, it is still employed by modern astronomers, and I need hardly add that it was this calendar, now known as the Julian, which passed from the Nile valley with the Romans into the life of Europe, and thence to us moderns. The astronomical event by which the Egyptian marked the beginning of his year was the first appearance of Sothis, the Dog Star, at sunrise after he had been invisible for some time. They celebrated this day with a feast, and this "Feast of Sothis," which occurred on the nineteenth of July (Julian), was the New Year's Feast of the Egyptians. The interval between the heliacal risings of Sothis determined the length of the Egyptian year. Now, this Sothic year was almost exactly, and in 3231 B. C. was exactly, a quarter of a day longer than the Egyptian calendar year of 365 days. Every four years, therefore, the calendar reached the end of the year and began the next year one day too soon, so that after four years the rising of Sothis fell on the second day of the new year. As this process continued and each calendar New Year's Day arrived earlier and earlier, it finally passed gradually around the whole year and again fell on the astronomical New Year's Day. This complete revolution, of course, consumed four times as many years as there were days in the calendar year; that is, four times 365, or 1,460 years. Or we may say 1,461 calendar years equal 1,460 Sothic years. This shift must have been early noticed, although the actual shift within an average lifetime was not so great as to occasion inconvenience. Thus each generation accepted the place of the calendar in the seasons as they found it, and without remark considered it as a matter of course that the beginning of the inundation or the advent of summer heat fell on about such and such a date of a certain month. A peasant of fifty or sixty years—that is, at the end of an average life—hardly remarked that the seasons were ten or twelve days later in the calendar than when he was a lad of ten.

This slow revolution of the calendar on the fixed astronomical year is observable in incidental references on the monuments. In the Middle Kingdom an inscription in Sinai, for example, narrates how an unfortunate official, dispatched to the copper mines there, arrived at his destination in the third month of (calendar) winter, when he and his men suffered greatly from the summer heat![1] This shows a divergence of seven or eight months between the calendar and the seasons. The shift of the calendar can thus be traced for some two thousand years backward from 700 B. C., as determined by six different dates of astronomical or seasonal events, and a series of other significant *natural* occurrences, in terms of the *calendar*. Now, we know from a statement in Censorinus that some time in the period from 140–41 to 143–44 A. D. the calendar coincided exactly with the seasons, and that in one of the years in that period the rising of Sothis took place on the first day of the calendar year. An entire revolution, such as we have described, was completed at that time. That revolution must have begun 1,460 years earlier; that is, in 1320 B. C.[2] The next earlier revolution must have begun in 2780 B. C.; that is, at about the beginning of the age at which we are first able to observe contemporary indications of the shift, as we have already noticed. Now, it is impossible that this calendar was first introduced as late as the twenty-eighth century B. C., in the midst of the highest culture of the Old Kingdom. Moreover, the five intercalary days at the end of the year, proving the use of the shifting year of 365 days, are mentioned in the Pyramid Texts, which are far older than the Old Kingdom.

The calendar, therefore, existed before the Old Kingdom; but if this be true, we must seek its invention at a time when its seasons coincided roughly with those of nature, as they must have done at its introduction. This carries us 1,460 years back of their coincidence in the Old Kingdom; that is, the calendar was introduced in the middle of the forty-third century B. C. (4241 B. C.). This is the oldest fixed date in history.[3] This fact demonstrates not only a remarkable degree of precise knowledge of nature in that remote age, but also stable political conditions, and a wide recognition of central authority, which could gradually introduce such an innovation.

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[1] See the author's *Ancient Records of Egypt*, Vol. I, §§ 733 ff.

[2] Ignoring the uncertainty of four years.

It was to the men of the Delta, therefore, in this remote epoch, that we owe a fundamental contribution to civilization which, with but very slight change, we have since inherited from them; and the date at which they introduced and made practically available one of the greatest conveniences in the whole complex of civilization is the earliest fixed date in history.

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[3] See Eduard Meyer, "Aegyptische Chronologie," in *Abhandlungen der Berliner Akademie*, 1904, pp. 38–44.